



Horticulture/Concurrent Enrollment (01.0641) (District)

Granite Technical Institute > 2016-2017 > Intermediate > Agricultural Education > Horticulture/Concurrent Enrollment (01.0641) (District) > Gowans, Kristina; Hartley, Devon
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Unit	CTE Standards and Objectives	Essential Questions	Content	Skills	Vocabulary	Formative & Summative Assessments
FFA/SAE (Week 1, 3 Weeks)	<p>UT: CTE: Agricultural Education</p> <p>UT: Grades 9-12 Animal Science I Standard 1</p> <p>Students will explain the role of FFA in agricultural education.</p> <p>Objective 1 Discuss the history and organization of FFA as it relates to the complete program of agricultural education.</p> <p>a. Explain the interrelationship of classroom and laboratory instruction, supervised agricultural experience, and FFA.</p> <p>b. Describe how, when, and why FFA was organized.</p> <p>c. Identify key FFA historical events.</p> <p>d. Identify the mission and strategies, colors, motto, emblem and parts of the emblem, and organizational structure of FFA.</p> <p>e. Recite and explain</p>	<p>What is the FFA?</p> <p>What opportunities does the FFA have for you?</p> <p>What is an SAE?</p> <p>How many different types of SAE's are possible for you?</p>	<p>FFA</p> <ul style="list-style-type: none"> • History dates (1928-1988) • Official Dress • Degrees • Membership • Creed • Program of Activities • Supervised Agricultural Experience • Officers • Emblem • Mission Statement • Motto • FFA Salute • Career Development Event • Members Part • FFA Colors <p>SAE</p> <ul style="list-style-type: none"> • Exploratory • Entrepreneurship/Ownership • Placement • Research/Experimentation • Awards available 	<p>FFA</p> <ul style="list-style-type: none"> • Present the FFA Creed • Present the FFA Motto • Present the FFA Mission Statement • Present the FFA Members Part <p>SAE</p> <ul style="list-style-type: none"> • Design and implement an effective SAE 	<p>FFA Career Development Events Creed SAE Program of Activities Exploratory Entrepreneurship/Ownership Mission Statement Greenhand Chapter State American Official Dress</p>	<p>FFA Test Summative: Test: Written FFA Creed Common: Oral: Presentation FFA Officer Quiz Formative: Test: Written</p>

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	<p>the meaning of the FFA Creed.</p> <p>f. Discuss the meaning and purpose of a program of activities and its committee structure.</p> <p>g. List FFA chapter officers, and discuss the role of each.</p> <p>Objective 2 Identify opportunities in FFA.</p> <p>a. Describe FFA opportunities that develop leadership skills, personal growth, and career success.</p> <p>b. Summarize major state and national activities available to FFA members.</p> <p>Objective 3 Describe FFA degrees, awards, and career development events (CDEs).</p> <p>a. List and explain the FFA degree areas.</p> <p>b. Identify FFA proficiency awards.</p> <p>c. List and discuss various team and individual CDEs.</p> <p>Standard 2 Students will explain the role of supervised agricultural experience (SAE)</p>					

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	<p>programs in agricultural education.</p> <p>Objective 1 Examine the responsibilities and benefits associated with an SAE.</p> <p>a. Explain the meaning and benefits of supervised agricultural experience.</p> <p>b. Explain the characteristics of an effective SAE program and the responsibilities of those involved.</p> <p>Objective 2 Determine the types of SAE programs.</p> <p>a. Compare entrepreneurship SAEs and placement SAEs.</p> <p>b. Describe research/experimentation on SAEs.</p> <p>c. Describe exploratory SAEs.</p> <p>Objective 3 Plan an SAE program.</p> <p>a. Identify the steps in planning an SAE program.</p> <p>b. Describe the function of a business/training plan and/or agreement in an SAE program.</p> <p>c. Develop a short-</p>					

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	<p>range plan and a long-range plan for an SAE program.</p> <p>d. Relate classroom and laboratory instruction to an SAE program.</p> <p>Objective 4 Maintain and use SAE records.</p> <p>a. Explain the importance of keeping records on an SAE program.</p> <p>b. Explain how SAE records are organized.</p> <p>c. Follow approved procedures to make entries in SAE records.</p>					
<p>Introduction and careers in horticulture (Week 1, 1 Week)</p>	<p>UT: CTE: Agricultural Education</p> <p>UT: Grades 9-12 Plant & Soil Science I</p> <p>Standard 3 Students will explain the history, importance, and scope of plant science.</p> <p>Objective 1 Discuss the history of agriculture.</p> <p>a. Explain how the</p>	<p>What is horticulture? Is horticulture a growing or shrinking industry? How wide of an industry is horticulture?</p>	<ul style="list-style-type: none"> • Plant science careers • Plant science terms • Horticulture industry <ul style="list-style-type: none"> ○ Floriculture ○ Pomology ○ Olericulture ○ landscape design ○ turf grass management ○ ornamental 	<ul style="list-style-type: none"> • Student's will identify the different fields and area of plant science 	<ul style="list-style-type: none"> • Plant science • Plant technologies • Biotechnologies • Floriculture • Pomology • Olericulture • landscape design • turf grass management • ornamental horticulture • Plant science technologies 	<p>Intro to horticulture Summative: Test: Written</p>

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	<p>science of agriculture helped develop civilization, including agronomic, horticultural, and forestry plants.</p> <p>b. Identify the major innovators and milestones in the advancement of agriculture.</p> <p>Objective 2 Discuss the importance of plant science.</p> <p>a. Identify the various roles of plants in everyday life.</p> <p>b. Identify agriculturally important plants, and explain their uses.</p> <p>Objective 3 Identify career opportunities in plant science.</p> <p>a. Identify and describe the major areas of plant science.</p> <p>b. Identify career opportunities in plant science, and determine the education and training they entail.</p> <p>c. Explain the contents of soil.</p> <p>d. Describe soil texture and structure.</p>			<p>horticultur e.</p>		

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<p>Structure of higher plants nomenclature (Week 2, 1 Week)</p>	<p>UT: CTE: Agricultural Education UT: Grades 9-12 Plant & Soil Science I Standard 5 Students will describe plant anatomy and physiology concepts. Objective 1 Explain plant classification. a. Explain systems used to classify plants. b. Compare and contrast the hierarchical classification of agricultural plants. c. Classify plants according to life cycles, plant use, and status as monocotyledons or dicotyledons.</p>	<p>How do we decide the name of plants? Are all plants the same? What are some differences in plants?</p>	<ul style="list-style-type: none"> • Taxonomy • Dichotomous Key • Basic Scientific names and common names • Monocot versus dicot 	<ul style="list-style-type: none"> • Students will design their own dichotomous key 	<ul style="list-style-type: none"> • Taxonomy • Dichotomous key • Family • Genus • Species • order • Kingdom • Phylum • Monocot • Dicot 	<p>Dichotomous Key Summative: Performance : Lab Assignment</p>
<p>Plant Anatomy and Physiology (Week 2, 1 Week)</p>	<p>UT: CTE: Agricultural Education UT: Grades 9-12 Plant & Soil Science I</p>	<p>Do plants have parts? Are all plant parts the same? Do we have girl plants and boy plants?</p>	<ul style="list-style-type: none"> • Structure, different varieties, and different adaptations for each of the following: <ul style="list-style-type: none"> ○ Seed ○ Root ○ Stem 	<ul style="list-style-type: none"> • Student's will visually identify different plants based on their seed, root, stem, 	<ul style="list-style-type: none"> • Seed Coat • Endosperm • Cotyledon • Tap root • fibrous root • vascular bundles 	<p>Plant matchup Summative: Project: Personal</p>

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	<p>Standard 5 Students will describe plant anatomy and physiology concepts.</p> <p>Objective 3 Describe the anatomical features of a plant and their functions.</p> <p>a. Describe the structures of a seed, the types of seeds, and the function of seeds.</p> <p>b. Describe the components of a root, the types of roots, and the functions of roots.</p> <p>c. Describe the structures of a stem, the types of stems, and the functions of stems.</p> <p>d. Describe the structures of a leaf, the types of leaves, and the functions of leaves.</p> <p>e. Describe the major parts of a flower, their functions, and the types of flowers and flower forms.</p> <p>f. Describe the structures of fruit, the types of fruit, and the purpose of fruit.</p>		<ul style="list-style-type: none"> ○ Leaf ○ Flower ○ Fruit 	leaf, flower and fruit.	<ul style="list-style-type: none"> • parell veination • Palm like veination • Stamenite • Pistilate • Complete Flower • Perfect Flower 	

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Plant Growth and development <i>(Week 3, 1 Week)</i>	UT: CTE: Agricultural Education UT: Grades 9-12 Plant & Soil Science I Standard 5 Students will describe plant anatomy and physiology concepts. Objective 4 Determine the influence of environmental factors on plant growth. a. Describe the functions of water in plant growth. b. Explain plant responses to a shortage or excess of water. c. Describe efficient use of water in plant production. d. Explain the qualities of light that affect plant growth, including color, intensity, and duration. e. Explain plant responses to light. f. Describe the effects of temperature on plant growth. g. Describe plant	How do plants grow? Do we give plants steroids? Do we give them nutrients?	<ul style="list-style-type: none"> • What plants need to grow <ul style="list-style-type: none"> ○ Light ○ water ○ temperature • What affects plant growth <ul style="list-style-type: none"> ○ disease ○ parasite 	<ul style="list-style-type: none"> • Students will identify common disease and parasites in plants • Students will identify the water cycle in plants. 	<ul style="list-style-type: none"> • Photosynthesis • Turgor • corn weavel • bot fly • mites • white fly • fungus gnats • water cycle • germination period • humidity level 	Water Cycle Summative: Project: Personal Diseases and parasites Summative: Project: Personal

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	<p>responses to temperature extremes. h. Describe the effect of diseases and insects on plant growth.</p>					
<p>Plant Climate and Growth (Week 4, 1 Week)</p>	<p>UT: CTE: Agricultural Education UT: Grades 9-12 Plant & Soil Science I Standard 5 Students will describe plant anatomy and physiology concepts. Objective 4 Determine the influence of environmental factors on plant growth. a. Describe the functions of water in plant growth. b. Explain plant responses to a shortage or excess of water. c. Describe efficient use of water in plant production. d. Explain the qualities of light that affect plant growth, including</p>	<p>Is every state in the US the same climate? How small can an area be to have its own climate? How big can an area be and still be considered a climate?</p>	<ul style="list-style-type: none"> Climate Zones in the US. Determining how climate affects plant growth 	<ul style="list-style-type: none"> Students will design their own climate zone map with common plants on them. 	<ul style="list-style-type: none"> Climate Humidity Wind chill Climate Zone precipitation Temperature water index elevation level desert tropical soil fertility 	<p>Climate Zone Map Summative: Project: Personal</p>

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	<p>color, intensity, and duration.</p> <p>e. Explain plant responses to light.</p> <p>f. Describe the effects of temperature on plant growth.</p> <p>g. Describe plant responses to temperature extremes.</p> <p>h. Describe the effect of diseases and insects on plant growth.</p>					
<p>Photosynthesis and respiration (Week 5, 1 Week)</p>	<p>UT: CTE: Agricultural Education</p> <p>UT: Grades 9-12 Plant & Soil Science I</p> <p>Standard 5</p> <p>Students will describe plant anatomy and physiology concepts.</p> <p>Objective 2</p> <p>Explain the structures of plant cells and important cell processes.</p> <p>a. Describe the structures of a typical plant cell and their functions.</p> <p>b. Compare and</p>	<p>What do plants get from the environment ?</p> <p>What do we get from plants?</p> <p>Are plants able to keep up with the growing population of humans?</p>	<ul style="list-style-type: none"> • Photosynthesis • Cellular Respiration • Transpiration • Krebs Cycle • Calvin Cycle • Pros and Cons of Plant and the cycles on the earth 	<ul style="list-style-type: none"> • Students will learn and present one of the cycles to the class as a whole. 	<ul style="list-style-type: none"> • Photosynthesis • Cellular Respiration • Transpiration • Krebs Cycle • Calvin Cycle • Chloroplast • ATP • Carbohydrates • Sugar • Oxygen • Nitrogen 	<p>Plant Cycle Presentation</p> <p>Summative: Performance : Skill Demonstration</p>

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	<p>contrast mitosis and meiosis.</p> <p>Objective 5 Explain plant physiology concepts and energy conversion in plants.</p> <p>a. Explain the basic process of photosynthesis and its importance to life on Earth.</p> <p>b. Explain requirements necessary for photosynthesis to occur, and identify the products and byproducts of photosynthesis.</p> <p>c. Explain cellular respiration and its importance to plant life.</p> <p>d. Explain factors that affect cellular respiration, and identify the products and byproducts of cellular respiration.</p>					
<p>Propagation of plants (Week 6, 1 Week)</p>	<p>UT: CTE: Agricultural Education</p> <p>UT: Grades 9-12 Plant & Soil Science I</p>	<p>What is propagation ?</p> <p>Do plants reproduce through asexual or sexual reproduction ?</p>	<ul style="list-style-type: none"> • Sexual Reproduction <ul style="list-style-type: none"> ○ Indirect Seeding ○ Direct Seeding • Asexual reproduction <ul style="list-style-type: none"> ○ Cutting ○ Layering 	<ul style="list-style-type: none"> • Student's will perform different methods of propagation . 	<ul style="list-style-type: none"> • Sexual Reproduction • Asexual reproduction • Indirect seeding • Direct Seeding • Cutting • Layering 	<p>Propagation Summative: Performance : Authentic Task</p>

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	<p>Standard 5 Students will describe plant anatomy and physiology concepts.</p> <p>Objective 6 Explain plant reproduction.</p> <p>a. Compare and contrast sexual and asexual reproduction.</p> <p>b. Explain pollination, cross-pollination, and self-pollination of flowering plants.</p> <p>c. Diagram the process of plant fertilization.</p> <p>d. Describe the process of seed germination.</p> <p>e. Explain the conditions required for seed germination.</p> <p>f. Explain the importance of seed viability and vigor.</p> <p>g. Describe optimal conditions for asexual propagation.</p> <p>h. Demonstrate techniques used to propagate plants by cuttings, division, separation, and layering.</p> <p>i. Describe grafting techniques.</p>	<p>Can all plants reproduce both ways?</p>	<ul style="list-style-type: none"> ○ Division ○ Separation ○ Tissue Culture ○ Budding ○ Grafting 	<ul style="list-style-type: none"> ● Division ● Separation ● Tissue Culture ● Budding ● Grafting 		

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<p>Properties of soil and soil fertility (Week 7, 1 Week)</p>	<p>UT: CTE: Agricultural Education UT: Grades 9-12 Plant & Soil Science I Standard 4 Students will explain soil science concepts.</p> <p>Objective 1 Explain the meaning and importance of soil. a. Explain the importance of soil as a life-supporting layer. b. Describe the agricultural and the nonagricultural uses of soil.</p> <p>Objective 2 Describe basic physical, biological, and chemical properties of soil and soilless media. a. Explain soil components. b. Describe the physical characteristics of soil and soilless media. c. Describe the biological activity within soil and soilless media. d. Describe the chemical properties of</p>	<p>What is in your soil? Is soil the same from place to place? What is the difference between soil and dirt?</p>	<ul style="list-style-type: none"> • Soil Materials <ul style="list-style-type: none"> ○ Perlite ○ Vermiculite ○ Bark ○ Organic Matter ○ Lyme ○ Sphagnum Moss ○ Peat moss • Ph Scale <ul style="list-style-type: none"> ○ 0-14 ○ Akaline ○ Basic ○ Acidity • What can we do to change the Ph of a soil 	<ul style="list-style-type: none"> • Student's will determine the pH of soil • Student's will visually identify the different components of soil. 	<ul style="list-style-type: none"> • Perlite • Vermiculite • Bark • Organic Matter • Lyme • Sphagnum Moss • Peat Moss • pH scale • Akaline • basic • acidity 	<p>Visually Identify components of soil Summative: Performance : Lab Assignment pH testing Summative: Performance : Authentic Task</p>

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	<p>soil and soilless media. e. Explain the characteristics of water movement in soil and soilless media.</p> <p>Objective 3 Explain soil fertility. a. Describe the meaning and importance of soil fertility. b. Explain the role of organic matter, soil depth, surface slope, soil organisms, and nutrient balance in soil productivity.</p>					
<p>Outdoor plant disorders <i>(Week 8, 1 Week)</i></p>	<p>UT: CTE: Agricultural Education UT: Grades 9-12 Plant & Soil Science I Standard 6 Students will explain principles of horticulture.</p> <p>Objective 1 Explain plant management for food production. a. Plan and prepare a vegetable/herb garden. b. Describe the</p>	<p>What effects the growth of plants? What types of disease and parasites affect outdoor plants? Are they the same for the indoor plants and the outdoor plants?</p>	<ul style="list-style-type: none"> • Common diseases of outdoor plants • Common Parasites of outdoor plants • Control of disease and parasites <ul style="list-style-type: none"> ○ Organic ○ Chemical 	<ul style="list-style-type: none"> • Visually identify damages to plants caused by disease and parasites. 	<ul style="list-style-type: none"> • Snails • Potato bugs • Mites • White Flies • corn weavel • bots • BT corn • roundup ready • Marathon • Lady Bugs 	<p>Identifying different diseases and parasites Summative: Performance : Lab Assignment</p>

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	<p>important techniques in producing tree fruits and small fruits.</p> <p>c. Describe the elements of edible landscaping and limited space food production including roof top, container, and raised-bed gardening.</p> <p>d. Explain the techniques involved in producing small grain and oil crops.</p> <p>e. Discuss the importance of hay and forage production to the overall food system.</p> <p>Objective 2 Explain plant management for ornamental horticulture production.</p> <p>a. Describe lawn establishment and care.</p> <p>b. Plan and prepare a flower garden.</p> <p>c. Develop a home landscape plan.</p> <p>d. Describe the important techniques of landscape maintenance.</p> <p>e. Describe the elements of growing plants indoors.</p>					

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Vegetable Gardening <i>(Week 9, 1 Week)</i>	UT: CTE: Agricultural Education UT: Grades 9-12 Plant & Soil Science I Standard 6 Students will explain principles of horticulture. Objective 1 Explain plant management for food production. a. Plan and prepare a vegetable/herb garden. b. Describe the important techniques in producing tree fruits and small fruits. c. Describe the elements of edible landscaping and limited space food production including roof top, container, and raised-bed gardening. d. Explain the techniques involved in producing small grain and oil crops. e. Discuss the importance of hay and forage production to the overall food system.	What is a vegetable? Are all vegetables produced for human consumption? Can you grow all vegetables in the same location?	<ul style="list-style-type: none"> • Vegetable Production • Different styles of vegetable production <ul style="list-style-type: none"> ○ large farm ○ small farm ○ raised beds ○ potted gardens ○ greenhouse growth. • Different germination and growth cycles of vegetables 	<ul style="list-style-type: none"> • Student's will identify what is a vegetable and the most common growth practice for them. 	<ul style="list-style-type: none"> • Vegetable • large farm • small farm • raised beds • potted gardens • germination • transplanting • harvesting • combine • labor 	Identify vegetable production Summative: Performance : Lab Assignment

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Tree Fruits and Nuts <i>(Week 10, 1 Week)</i>	UT: CTE: Agricultural Education UT: Grades 9-12 Plant & Soil Science I Standard 6 Students will explain principles of horticulture. Objective 1 Explain plant management for food production. a. Plan and prepare a vegetable/herb garden. b. Describe the important techniques in producing tree fruits and small fruits. c. Describe the elements of edible landscaping and limited space food production including roof top, container, and raised-bed gardening. d. Explain the techniques involved in producing small grain and oil crops. e. Discuss the importance of hay and forage production to the overall food system.	What is pomology? Can we grow all trees in Utah? Do all trees produce a fruit?	<ul style="list-style-type: none"> • Pomology • Growth of fruit trees <ul style="list-style-type: none"> ○ Climate for fruit trees ○ Special growth requirements for fruit trees • Growth of Nut trees <ul style="list-style-type: none"> ○ Climate for nut trees ○ special growth requirements for nut trees 	<ul style="list-style-type: none"> • Students will identify different forms of fruit tree and nut tree production. 	<ul style="list-style-type: none"> • Pomology • Humidity • Climate • Temperature • Soil Fertility • Acidity • Water index • elevation • precipitation • labor 	Fruit and Nut production Summative: Performance : Lab Assignment

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Bush and Small Fruits <i>(Week 11, 1 Week)</i>	UT: CTE: Agricultural Education UT: Grades 9-12 Plant & Soil Science I Standard 6 Students will explain principles of horticulture. Objective 1 Explain plant management for food production. a. Plan and prepare a vegetable/herb garden. b. Describe the important techniques in producing tree fruits and small fruits. c. Describe the elements of edible landscaping and limited space food production including roof top, container, and raised-bed gardening. d. Explain the techniques involved in producing small grain and oil crops. e. Discuss the importance of hay and forage production to the overall food system.	Because it is a small fruit does that mean it was raised on a small farm? What are the different requirements for small fruit versus large fruit? Why would we clump bushes and small fruits together?	<ul style="list-style-type: none"> • Bush Requirements <ul style="list-style-type: none"> ○ Climate ○ Humidity ○ Temperature ○ elevation ○ water index ○ Special Requirements • Small Fruit Requirements <ul style="list-style-type: none"> ○ Climate ○ Humidity ○ Temperature ○ Elevation ○ Water Index ○ Special requirements 	<ul style="list-style-type: none"> • Student's will identify bush and small fruit requirements and growth specifications. 	<ul style="list-style-type: none"> • Climate • Humidity • Temperature • Elevation • water Index • Acreage • Vineyard • Nursery • Stock plants 	Bush and Small fruit match up Summative: Performance : Lab Assignment

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Flower and Herb gardening <i>(Week 12, 1 Week)</i>	UT: CTE: Agricultural Education UT: Grades 9-12 Plant & Soil Science I Standard 6 Students will explain principles of horticulture. Objective 1 Explain plant management for food production. a. Plan and prepare a vegetable/herb garden. b. Describe the important techniques in producing tree fruits and small fruits. c. Describe the elements of edible landscaping and limited space food production including roof top, container, and raised-bed gardening. d. Explain the techniques involved in producing small grain and oil crops. e. Discuss the importance of hay and forage production to the overall food system.	What is xeriscaping? Should people in desert areas plant gardens that do not have a function? Can flowers be used?	<ul style="list-style-type: none"> • Flowers <ul style="list-style-type: none"> ○ Use of flowers ○ Purpose of flowers ○ Climate ○ Elevation ○ Xeric Flower beds ○ Different styles of flower beds • Herb Garden <ul style="list-style-type: none"> ○ Use of Herbs ○ Purpose of Herbs ○ Climate ○ Elevation ○ Xeric Herb beds ○ Different styles of herbs beds ○ Large scale herb beds 	<ul style="list-style-type: none"> • Student's will identify different types of flower and herb production systems. 	<ul style="list-style-type: none"> • Xeriscaping • Xeric • Herbs • Thyme • Basil • Oregano • Sage • Peppermint • Raised bed • beautification 	Flower and herb production matchp Summative: Performance : Lab Assignment

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	<p>Objective 2 Explain plant management for ornamental horticulture production.</p> <p>a. Describe lawn establishment and care. b. Plan and prepare a flower garden. c. Develop a home landscape plan. d. Describe the important techniques of landscape maintenance. e. Describe the elements of growing plants indoors.</p>					
<p>Landscape Planning, Installation, and maintenance <i>(Week 13, 2 Weeks)</i></p>	<p>UT: CTE: Agricultural Education UT: Grades 9-12 Plant & Soil Science I Standard 6 Students will explain principles of horticulture.</p> <p>Objective 2 Explain plant management for ornamental horticulture production.</p> <p>a. Describe lawn establishment and care.</p>	<p>What is landscaping ? What is xeriscaping ? Does Xeriscaping involve plants in a desert?</p>	<ul style="list-style-type: none"> • Landscape Design • Landscape Maintenance • Landscape Installation • Xeriscaping landscape plans 	<ul style="list-style-type: none"> • Students will design a landscape plan. 	<ul style="list-style-type: none"> • Landscape Design • Hand sketch • Key • Installation • Maintenance • Xeriscaping • Cactus • Hens and Chicks • Succulents • Bark • Rock designs 	<p>Landscape Design Summative: Performance : Authentic Task</p>

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	<ul style="list-style-type: none"> b. Plan and prepare a flower garden. c. Develop a home landscape plan. d. Describe the important techniques of landscape maintenance. e. Describe the elements of growing plants indoors. 					
<p>Lawn and Lawn substitutes (Week 15, 1 Week)</p>	<p>UT: CTE: Agricultural Education UT: Grades 9-12 Plant & Soil Science I Standard 6 Students will explain principles of horticulture. Objective 2 Explain plant management for ornamental horticulture production. a. Describe lawn establishment and care. b. Plan and prepare a flower garden. c. Develop a home landscape plan. d. Describe the important techniques of landscape maintenance.</p>	<p>What is lawn? What is the difference between lawn and turf? How many sports fields in the world are actual lawn?</p>	<ul style="list-style-type: none"> • Lawn <ul style="list-style-type: none"> ○ Different types of lawn ○ installation of lawn ○ Maintenance of lawn • Turf <ul style="list-style-type: none"> ○ Different types of turf ○ Installation of turf ○ Maintenance of turf • Sprinkler Installation 	<ul style="list-style-type: none"> • Identifying the difference between turf and lawn. • Students will design a sprinkler installation method. 	<ul style="list-style-type: none"> • Lawn • Turf • Artificial turf • Synthetic Turf • Kentucky Blue Grass • Aeration • Fertilization • Design plan • labor • materials 	<p>Name that grass Summative: Performance : Lab Assignment Sprinkler Design Summative: Performance : Lab Assignment</p>

Unit	CTE Standards and Objectives	Essential Questions	Content	Skills	Vocabulary	Formative & Summative Assessments
	e. Describe the elements of growing plants indoors.					
Greenhouse <i>(Week 16, 1 Week)</i>	UT: CTE: Agricultural Education UT: Grades 9-12 Plant & Soil Science I Standard 5 Students will describe plant anatomy and physiology concepts. Objective 6 Explain plant reproduction. a. Compare and contrast sexual and asexual reproduction. b. Explain pollination, cross-pollination, and self-pollination of flowering plants. c. Diagram the process of plant fertilization. d. Describe the process of seed germination. e. Explain the conditions required for seed germination. f. Explain the importance of seed	What is a greenhouse? What are the pros and cons of a greenhouse? Why does not everyone have a greenhouse?	<ul style="list-style-type: none"> • Greenhouse Structure <ul style="list-style-type: none"> ○ Interior ○ Exterior ○ Flooring ○ Covering ○ Shape • Greenhouse Climate <ul style="list-style-type: none"> ○ Heating ○ Air Condition ○ Ventilation ○ Light ○ Shade • Greenhouse operation <ul style="list-style-type: none"> ○ Tables ○ watering systems ○ control systems 	<ul style="list-style-type: none"> • Student's will design their own greenhouse . 	<ul style="list-style-type: none"> • Hoop house • Quonset • A Frame • Head House • Gothic Arches • Acrylic • Glass • Polycarbonate • Fiber Glass • Polyethelene 	Design your own greenhouse Summative: Performance : Authentic Task

Unit	CTE Standards and Objectives	Essential Questions	Content	Skills	Vocabulary	Formative & Summative Assessments
	<p>viability and vigor. g. Describe optimal conditions for asexual propagation. h. Demonstrate techniques used to propagate plants by cuttings, division, separation, and layering. i. Describe grafting techniques.</p> <p>Standard 6 Students will explain principles of horticulture.</p> <p>Objective 2 Explain plant management for ornamental horticulture production. a. Describe lawn establishment and care. b. Plan and prepare a flower garden. c. Develop a home landscape plan. d. Describe the important techniques of landscape maintenance. e. Describe the elements of growing plants indoors.</p>					
<p>Careers (Week 16, 4 Weeks)</p>	<p>UT: CTE: Agricultural Education</p>	<p>What are agricultural careers?</p>	<ul style="list-style-type: none"> • Define Careers • Determine agricultural careers 	<ul style="list-style-type: none"> • Present and research agricultural 	<p>Bachelor degree Associates degree Masters degree Doctorate</p>	<p>Career presentation</p>

Unit	CTE Standards and Objectives	Essential Questions	Content	Skills	Vocabulary	Formative & Summative Assessments
	<p>UT: Grades 9-12 Animal Science I Standard 8 Students will examine trends and career opportunities in the animal industry, including those related to agricultural animals.</p> <p>Objective 1 Interpret trends in the animal industry. a. Identify trends in the animal industry. b. Determine the implications of trends on animal production.</p> <p>Objective 2 Determine career opportunities in the animal industry. a. Identify the nature of career opportunities in the animal industry. b. Develop a career plan to acquire needed education and skills for entering a career in the animal industry. c. Demonstrate personal and job skills for success in entering and advancing in a career in the animal industry.</p>	<p>Is agriculture a growing industry? Are there job openings in the agricultural area?</p>		<p>careers for salary, schooling, pros and cons and typical days.</p>	<p>college university technical school trade school 2 year certificate apprentice internship</p>	<p>Common: Oral: Presentation</p>

Unit	CTE Standards and Objectives	Essential Questions	Content	Skills	Vocabulary	Formative & Summative Assessments
	<p>*Please note that specific animal industries were not included in the standards and objectives. This allows flexibility for the teacher to use specific industries to teach these concepts based on location, facilities available, and student and teacher interest.</p>					